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#### SPECIFIC GRAVITY OF SNOW.

By M. E. T. GHEURY. Dated Eltham, England, August 3, 1907.

I had made preparations to ascertain, during the winter of 1906-7, the weight of snow that can accumulate on suspended wires of various diameters. Owing to lack of favorable meteorological conditions and to the fact that I was away from home during the only heavy snowfall in London, I had to be content with simply taking measurements of the specific gravity of snow. This was done by placing a shallow rectangular tray with vertical edges on the ground and leaving it till well covered by the snow. On lifting it carefully it was found that the shearing of the snow took place in a very reg-

ular manner and left on the tray a neat rectangular solid of snow, the latter being undisturbed by the process and in the same state as the snow on the surrounding ground.

January 24, 1907. After two days' hard frost, snow fell in very fine powder from morning till evening, when the measurements were taken. It lay frozen in a powder without any cohesion, but could, however, be made into balls by strong compression, undergoing considerable reduction of volume during the process. The snowfall had been insufficient to completely cover the tray, and near one edge a ridge of snow had been formed by the wind, while on the opposite side the snow did not quite reach the side of the tray, there being a gap of about one-twentieth of an inch. The excess due to the ridge was ascertained to approximately compensate the deficiency due to the gap.

Size of tray, 23.3 cm.  $\times$  10.9 cm. = 254 sq. cm.

Weight of tray, 87.81 grams.

Average depth of snow, 0.9 cm. (ascertained by placing vertically in the snow, at various places, a small divided scale).

Weight of snow, 17.48 grams.

Specific gravity of snow, 0.076.

Depth required for a load of 1 kilogram per square meter, 13.2 mm.

February 4, 1907. Snow fell during the afternoon and the evening. It was fluffy, adherent, forming a compact mass without much pressure, but undergoing a considerable reduction in volume during the process. Instead of being formed of very small grains as on the 24th, it was made of fine hexagonal stars and fine needles of ice, with evidently many air spaces. A cat had left a footprint in one corner of the tray. As it might have carried some snow away with it, the trodden part was cut carefully away, leaving an effective area of 169 sq. cm.

Average depth of snow, 2.2 cm.

Weight of tray, 86.10 grams. (It had become rusty and had been cleaned the day before.)

Weight of snow, 19.52 grams.

Specific gravity of snow, 0.052.

Depth required for a load of 1 kilogram per square meter, 19.2 mm.

By collecting some snow on a sloping roof and carefully measuring the dimensions of the solid, its volume being found to be 1677.6 cm<sup>3</sup>, with a weight of 60.09 grams, the specific gravity of the snow was found to be 0.036. This method is, however, subject to inaccuracies, as it is very difficult to measure the volume of the solid space occupied by the snow in these conditions.

#### ATMOSPHERIC DUST IN THE GULF OF MEXICO.

By E. BANVARD, second officer Amer. S.S. *Monterey*, Capt. Arthur Smith, of the New York and Cuba Mail Steamship Company, on voyage from Vera Cruz to New York.

• On January 13, 1908, after the blow of January 12, we found the ship covered with a fine gray or white dust, especially the masts and rigging, something I have never seen before during a gale in the Gulf. The wind was west. The dust must have been carried from the coast of Mexico, or possibly from Texas, by an upper current of air. We were hove to about fifteen miles north of Progreso.